CLAIMS

1. A system for detecting position or dimensions of a piece (**3**), including

- at least one checking probe (**1**) with detection devices (**2**),
- a remote transmission unit (**4**), connected to the detection devices (**2**) of said at least one probe (**1**), and adapted for wirelessly transmitting pulse signals (**5**) indicative of the state of said at least one probe (**1**), and
- a receiver unit (**7**), adapted for wirelessly receiving signals (**5,NS**) and including
  - an input section, with at least one receiver device (**13**), adapted for providing input signals (**VA**),
  - a generation and control section (**16,16'**) adapted for generating and for defining reference signals (**VTH**), and
  - a comparison section (**20**) connected to the input section and the generation and control section (**16,16'**), adapted for providing output signals (**VO**) responsive to the results of comparisons between the input signals (**VA**) and the reference signals (**VTH**),
- the generation and control section (**16,16'**) including threshold generation circuits (**30**) and automatic checking circuits (**40,50**) for checking the difference in amplitude between the input signals (**VA**) and the reference signals (**VTH**),

characterized in that said automatic checking circuits include discriminating circuits (**50**) adapted for detecting at least one attribute of the input signals (**VA**) and for varying said difference in amplitude if said at least one detected attribute corresponds to wirelessly received signals that differ from said pulse signals (**5**) transmitted by the remote unit (**4**).

2. The system according to claim 1, wherein said input

section includes amplification circuits (**15**) of the received signals (**5,NS**), said input signals (**VA**) being amplified signals.

3. The system according to claim 1 or claim 2, wherein said at least one attribute is the distribution in amplitude of the input signals (**VA**).

4. The system according to claim 3, wherein the discriminating circuits (**50**) include components (**51,53,55,57**) adapted for evaluating the duty-cycle of the input signals (**VA**).

5. The system according to claim 4, wherein the discriminating circuits (**50**) include components (**51,53,55,57**) adapted for detecting input signals (**VA**) with duty-cycle exceeding a predetermined value, and for consequently varying said difference in amplitude.

6. The system according to one of the preceding claims, wherein the automatic checking circuits also include detecting circuits (**40**) adapted for revealing peak values of the amplitude of the input signals (**VA**), the detecting circuits (**40**) being connected to the threshold generator circuits (**30**) for dynamically and temporarily varying said reference signals (**VTH**).

7. The system according to one of the preceding claims, wherein said discriminating circuits (**50**) are connected to the threshold generating circuits (**30**) for varying in amplitude said reference signals (**VTH**).

8. The system according to claim 2, wherein said discriminating circuits (**50**) are connected (**60**) to the amplification circuits (**15**) for varying in amplitude said amplified signals.

9. A method for checking the dimensions or the position of a piece (**3**), by means of at least one checking probe (**1**) including detection devices (**2**), at least one remote transmission unit (**4**) connected to said at least one checking probe (**1**) and adapted for wirelessly transmitting signals in the form of pulses (**5**), and a receiver unit (**7**), adapted for receiving said signals in the form of pulses (**5**), whereby input signals (**VA**) in the receiver unit (**7**) are compared in amplitude with reference signals (**VTH**) for providing output signals (**VO**), and the difference in amplitude between the reference signals (**VTH**) and the input signals (**VA**) is varied in a dynamic way, characterized by the steps of:

- identifying the noise signals (**NS**) on the basis of attributes differing from those of the signals (**5**) transmitted by the remote transmission unit (**4**), and
- consequently varying in a dynamic way said difference in amplitude.

10. The method according to claim 9, wherein said step of identifying the noise signals (**NS**) is carried out based on a distribution in amplitude of the input signals (**VA**) that differs from that of the signals (**5**) transmitted by the remote transmission unit (**4**).

11. The method according to claim 10, wherein said step of identifying the noise signals (**NS**) is carried out based on a verification of the duty-cycle value of the input signals (**VA**).

12. The method according to claim 11, wherein said step of identifying the noise signals (**NS**) is carried out by means of a comparison of the duty-cycle of the input signals (**VA**) with a minimum predetermined value.

13. The method according to one of claims from 9 to 12, wherein said step of varying the difference in amplitude

includes making the reference signals (**VTH**) greater than, in terms of absolute value, the peak amplitude of the component of the input signals (**VA**) corresponding to the noise signals **NS**.

14. The method according to one of claims from 9 to 13, wherein in the receiver unit (**7**), said signals in the form of pulses (**5**) are received and amplified in order to obtain said input signals (**VA**).

15. The method according to one of claims from 9 to 14, wherein said step of varying the difference in amplitude includes an automatic check of the amplitude of the reference signals (**VTH**).

16. The method according to claim 14, wherein said step of varying the difference in amplitude includes an automatic control (**60**) of the amplitude of the input signal (**VA**).